Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A hand-held assay device for measuring the presence of a sample selected from the group consisting of ATP and other entity capable of generating chemiluminescence, comprising:

a housing with a closeable door for enclosing the sample in a sample compartment of the housing so that the sample is inside the housing in the absence of a source of light from outside of the housing when the door is closed;

a first light sensor inside the housing for generating a sample signal in response to detecting the chemiluminescence;

a second light sensor inside the housing shielded from the chemiluminescence and generating a reference signal;

~~a third sensor inside the housing for generating a door signal indicative of a closed door; and~~

a controller inside the housing receiving the sample signal~~, the~~ and the reference ~~signal and the door~~ signal, wherein the controller outputs a resulting signal indicative

of the sample and determined as the difference between the sample and reference signals; and

software executed on the controller for determining the presence of light from outside the housing when the door is open and for generating a warning signal in response to the detection of the light, wherein the controller prevents the device from operating further unless there is an absence of a source of light from outside of the housing ~~the door is closed and outputs wherein the controller outputs a resulting signal indicative of the sample and determined as the difference between the sample and reference signals~~.

2. (Original) The hand-held assay device defined in claim 1, wherein the first and second light sensors are photodiodes, the hand-held device further comprising sample and reference switched integrators, each connected in series with the respective one of the photodiodes and outputting integrated values of the sample and reference signals received by the controller, the reference signal being generated in response to environmental changes selected from the group consisting of temperature, humidity, external shocks and a combination thereof.

3. (Original) The hand-held assay device defined in claim 2, wherein each of the integrators is provided with a respective integration bypass capacitor and a solid state switch connected in parallel to one another to provide the integrated values of the sample signal and the reference signal.

4. (Previously Presented) The hand-held assay device defined in claim 1 wherein the controller is a microprocessor having a memory which stores a sample threshold value, the hand-held device further comprising software executing on the microprocessor for closing solid state switches for a controllable integration time to provide the integrated values of the sample and reference signals corresponding to the duration of the closed state of the solid state switches, and software for comparing a value representing the resulting signal to the sample threshold value to determine the sample if the resulting signal is at least equal to the sample threshold value.

5. (Original) The hand-held assay device defined in claim 4, further comprising software executed on the controller for incrementally increasing the integration time

if the resulting signal is less than the sample threshold value.

6. (Previously Presented) A hand-held assay device for measuring the presence of a sample selected from the group consisting of ATP and other entity capable of generating chemiluminescence, comprising:

a housing for enclosing a sample in a sample compartment so that the sample is inside the housing in the absence of a source of light from outside of the housing;

a first light sensor inside the housing for generating a sample signal in response to detecting the chemiluminescence;

a second light sensor inside the housing shielded from the chemiluminescence and generating a reference signal;

a controller inside the housing receiving the sample and reference signal to output a resulting signal indicative of the sample and determined as the difference between the sample and reference signals, wherein the controller is a microprocessor having a memory which stores a sample threshold value;

software executing on the microprocessor for closing the solid state switches for initiation of a controllable integration time to provide the integrated values of the

sample and reference signals corresponding to the duration of the closed state of the solid state switches;

software for comparing a value representing the resulting signal to the sample threshold value to determine if the resulting signal is at least equal to the sample threshold value;

software executed on the controller for incrementally increasing the integration time if the resulting signal is less than the sample threshold value;

software executed on the controller for completing the determination of the sample upon reaching a predetermined integration time limit stored in the memory; and

software executed on the controller for detecting negative saturation of a switched integrator due to a rapid environmental change and for setting an integration time limit shorter than the predetermined time limit.

7. (Original) The hand-held assay device defined in claim 1, further comprising a pair of analog to digital converters digitizing the sample and reference signals, respectively, and software executed on the controller for subtracting the digitized reference signal from the digitized sample signal.

8. (Previously Presented) The hand-held assay device defined in claim 1, further comprising software executed on the controller for calculating a logarithmic number of the resulting signal and a display for displaying the calculated logarithmic number if calculated resulting signal exceeds a threshold value.

9. (Previously Presented) A hand-held assay device for measuring the presence of a sample selected from the group consisting of ATP and other entity capable of generating chemiluminescence, comprising:

a housing for enclosing the sample in a sample compartment so that the sample is inside the housing in the absence of a source of light from outside of the housing;

a first light sensor inside the housing for generating a sample signal in response to detecting the chemiluminescence;

a second light sensor inside the housing shielded from the chemiluminescence and generating a reference signal;

a controller inside the housing receiving the sample and reference signal to output a resulting signal indicative of the sample and determined as the difference between the sample and reference signals;

an LED turned on in response to powering up the device to emit a beam of light extending along a path; and

a transparent window along the path between the LED and the first light sensor, the controller having a calibration mode, wherein the cleanliness of the window is controlled in response to a signal generated by the first light sensor which is struck by the beam from the LED.

10. (Original) The hand-held assay device defined in claim 9, further comprising software executed on the controller for turning the LED on in response to powering up of the hand-held device, software executed on controller for measuring the signal representing light intensity of the light beam penetrating through the transparent window, and a comparator for providing a calibration value if the measured signal is within an expected intensity range of an LED reference signal stored in the memory.

11. (Original) The hand-held assay device defined in claim 10, further comprising software executed on the controller for adjusting the resulting signal indicative of the sample presence for the calibration value.

12. (Previously Presented) The hand-held assay device defined in claim 1, further comprising a transparent window in the sample compartment upstream from the first light sensor and spaced from the door, the transparent window for transmitting the chemiluminescence generated by the sample to the first light sensor.

13. (Previously Presented) A hand-held assay device for measuring the presence of a sample selected from the group consisting of ATP and other entity capable of generating chemiluminescence, comprising:

a housing for enclosing the sample in a sample compartment so that the sample is inside the housing in the absence of a source of light from outside of the housing;

a first light sensor inside the housing for generating a sample signal in response to detecting the chemiluminescence;

a second light sensor inside the housing shielded from the chemiluminescence and generating a reference signal;

a controller inside the housing receiving the sample and reference signal to output a resulting signal indicative of the sample and determined as the difference between the sample and reference signals; and

a transparent window in the sample compartment upstream from the first light sensor and a door spaced from the transparent window wherein a LED is mounted in a peripheral wall of the sample compartment and spaced from the transparent window, wherein a consumable for generating the chemiluminescence in the presence of the sample, which has been used to swab a surface to collect the sample to be tested, is removably inserted into the sample compartment to bring the sample to the window.

14. (Previously Presented) The hand-held device defined in claim 13 wherein the consumable is positioned in the sample compartment to block the beam of light emitted by the LED.

15. (Previously Presented) The hand-held assay device defined in claim 1, wherein the controller has a detection mode for a consumable for generating the chemiluminescence in the presence of the sample, wherein software is executed on the controller for detecting whether a signal inputted in the controller is within a predetermined range of intensity, which has low, mid and high levels and for determining if this signal is indicative of the presence of the consumable in the sample compartment.

16. (Previously Presented) The hand-held assay device defined in claim 15, further comprising software executed on the controller for turning a LED on, and software executed on a microprocessor for outputting an integrating value of the signal indicative of the presence of the consumable if the integrating value is at least equal to the stored Lled reference value and the high level exceeding NLled, wherein Lled is the stored LED reference value and N is a predetermined integer.

17. (Previously Presented) The hand-held assay device defined in Claim 15, further comprising software executed on the controller for turning a LED off if the value of the signal inputted in the controller has been determined to be at least equal to the mid-level but less than the high level of the predetermined range with the LED on, wherein the mid-level corresponds to a stored LED reference value, software executed on the controller for determining a new integrated value of the signal detected in response to turning the LED off, and software executed on the controller for comparing the integrated values L1 and L2 with the LED on and the LED off, respectively, to display the signal indicative of the presence of the consumable if these integrated values are substantially the same.

18. (Previously Presented) The hand-held assay device defined in claim 15, further comprising software executed on the controller for comparing the signal inputted in the controller with a LED off to the low level of the predetermined range and displaying a warning signal indicative of the absence of the consumable if the integrated value of the inputted signal is below the low level.

19. (Previously Presented) The hand-held assay device defined in claim 15, further comprising software executed on the controller for turning a LED off, said signal being indicative of the presence of the consumable in response to determining an integrated value of the signal if the determined value is at least equal to the mid-level of the predetermined range.

20. (Original) The hand-held assay device defined in claim 19, further comprising software executed on the controller for determining whether the signal is at least equal to the low level of the predetermined range, software executed on the controller for turning the LED on in response to detection of the low level, software executed on the controller for determining an integrated value of the signal after the LED has been turned on, and software for comparing the values of the resulting signal with the LED off and on, respectively, to display the signal indicative of the presence of the consumable if the determined values are substantially the same.

21. (Previously Presented) The hand-held assay device defined in claim 1, further comprising software executed on the controller for measuring first and second values of a signal processed by the controller with a LED on and off, respectively, software for subtracting second value from the first value, and software for outputting the signal indicative of the absence of the consumable if the difference is between a high-level and a low level of the predetermined range stored in the memory.

22. (Previously Presented) The hand-held assay device defined in claim 2, further comprising software executed on the controller for closing/opening solid state switches before determining the resulting signal indicative of the sample presence to short integration feedback capacitors for discharging accumulated photodiode charge.

23. (Original) The hand-held assay device defined in claim 10 wherein the transparent window is made from glass.

24. (Original) The hand-held assay device defined in claim 23 wherein one of the opposite sides of the window is coated with a coating of an optically transparent, conductive material to minimize the direct injection of charge during introduction of the sample into the sample compartment.

25. (Previously Presented) The hand-held assay device defined in claim 24 wherein the coating is indium tin-oxide (ITO) placed on the side of the window, which faces away from a first photodiode, to form with a chassis of the hand-held device a discharging element acting as a Faraday cage, the opposite side of the window being covered with a filter to limit the light striking the first photodiode.

26. (Original) The hand-held assay device defined in claim 23 wherein the window is made from a colored glass to serve as a filter selected from the group consisting of a band pass filter, band-limited filter and combination of these.

27. (Previously Presented) The hand-held assay device defined in claim 24 wherein the coating is placed on a side of the window facing a first photodiode, whereas the other side of the window is covered with a filter.

28. (Currently Amended) A hand-held assay device for measuring the presence of a sample selected from the group consisting of ATP and other entity capable of generating chemiluminescence, comprising:

a housing for enclosing the sample in a sample compartment so that the sample is inside the housing in the absence of a source of light from outside of the housing;

a chassis within the housing comprising a conductive material;

a first light sensor inside the housing for generating a sample signal in response to detecting the chemiluminescence;

a second light sensor inside the housing shielded from the chemiluminescence and generating a reference signal;

a controller inside the housing receiving the sample and reference signal to output a resulting signal indicative of the sample and determined as the difference between the sample and reference signals;

a transparent window in the sample compartment, covered with an electro-conductive plastic in electrical contact with the chassis, and having a filter which is a bandpass filter or a band-limited filter upstream from the first light sensor and a door spaced from the window; and

an optic including a pair of plano-convex lens opposedly

oriented between the consumable and the transparent window to focus and then spread the ~~light;~~ light, wherein in use a consumable comprising the entity on a swab for generating the chemiluminescence in the presence of the sample has been used to swab a surface to collect the sample to be tested, is inserted through the door into the sample compartment to bring the sample towards the transparent window, and wherein the transparent window is spaced from the bottom of the consumable~~, which is made of electro-conductive plastic; and~~.

29. (Previously Presented) A hand-held assay device for measuring the presence of a sample selected from the group consisting of ATP and other entity capable of generating chemiluminescence, comprising:

a housing for enclosing the sample in a sample compartment so that the sample is inside the housing in the absence of a source of light from outside of the housing;

a first light sensor inside the housing for generating a sample signal in response to detecting the chemiluminescence;

a second light sensor inside the housing shielded from the chemiluminescence and generating a reference signal;

a controller inside the housing receiving the sample and reference signal to output a resulting signal indicative of

the sample and determined as the difference between the sample and reference signals;

a transparent window in the sample compartment upstream from the first light sensor and a door spaced from the window; and

software executed on the controller for determining the presence of an opening in the door and for generating a warning signal in response to the detection of the light from the opening;

wherein the entity on a swab in a consumable for generating the chemiluminescence in the presence of the sample has been used to swab a surface to collect the sample to be tested and inserted through the door into the sample compartment to bring the sample towards the window

30. (Currently Amended) A hand-held assay device for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising:

a housing with a closeable door for enclosing a removeable consumable containing the sample in a sample compartment of the housing so that the sample and the

consumable are inside the housing in absence of a source of light from outside of the housing when the door is closed;

a detection assembly inside the housing for detecting the chemiluminescence in the sample compartment from the consumable and generating a sample signal in response to its detection;

a transparent window inside the housing between the sample compartment and detection assembly, said transparent window being covered with a conductive transparent coating to minimize the direct injection of static charge from the consumable; ~~and~~

a light source in the sample compartment which when activated emits light which projects through the transparent window and strikes the detection assembly to generate a reference signal; and

a controller inside the housing and software executed on the controller for comparing the reference signal to a reference value so as to prevent ~~for preventing~~ the device from operating further unless the reference signal is below a threshold suggesting that light from outside of the housing is absent, ~~the door is closed~~ and when the light source is turned off for determining whether a resulting signal processed in response to the sample signal generated by the

detection assembly is indicative of the presence of the sample.

31. (Previously Presented) The hand-held assay device defined in claim 30 further comprising a chassis inside the housing made of a conductive material and in contact with the coating to act as a Faraday cage.

32. (Previously Presented) The hand-held assay device defined in claim 30 wherein the transparent conductive coating on the window is indium tin-oxide (ITO).

33. (Original) The hand-held assay device defined in claim 30 wherein the detection assembly comprises:

a first photodiode generating a sample signal in response to chemiluminescence;

a second photodiode shielded from the chemiluminescence and generating a reference signal;

a sample and reference switched integrators, each connected in series with the respective one of the first and second photodiodes and outputting integrated values of the sample and reference signals received by the controller, the reference signal being generated in response to environmental changes selected from the group consisting of temperature, humidity and a combination thereof, and

software executed on the controller for subtracting the integrated value of the sample signal from the integrated value of the sample signal to determine the resulting signal.

34. (Previously Presented) A hand-held assay device for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising:

a housing provided with a sample compartment for enclosing the sample so as to generate the chemiluminescence in the sample compartment so that the sample is inside the housing in absence of a source of light from outside of the housing;

a detection assembly inside the housing for detecting the chemiluminescence and generating a signal in response to its detection;

a transparent window inside the housing between a sample chamber and detection assembly, said transparent window being covered with a conductive transparent coating to minimize the direct injection of static charge and wherein the transparent window has opposite sides, one of which is coated with an ITO providing a shutterless structure of the hand-held device, whereas the other side of the transparent window has a bandpass filter selected from the group consisting of a coating and a whole body; and

a controller inside the housing for determining whether a resulting signal processed in response to the signal

generated by the detection assembly is indicative of the presence of the sample.

35. (Previously Presented) A hand-held assay device for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising:

a housing provided with a sample compartment for enclosing the sample so as to generate the chemiluminescence in the sample compartment so that the sample is inside the housing in absence of a source of light from outside of the housing;

a detection assembly inside the housing for detecting the chemiluminescence and generating a signal in response to its detection;

a transparent window inside the housing between a sample chamber and detection assembly, said transparent window being covered with a conductive transparent coating to minimize the direct injection of static charge, wherein a first photodiode is juxtaposed with the side of the transparent window provided with a bandpass filter; and

a controller inside the housing for determining whether a resulting signal processed in response to the signal

generated by the detection assembly is indicative of the presence of the sample.

36. (Previously Presented) A hand-held assay device for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising:

a housing provided with a sample compartment for enclosing the sample so as to generate the chemiluminescence in the sample compartment so that the sample is inside the housing in absence of a source of light from outside of the housing;

a detection assembly inside the housing for detecting the chemiluminescence and generating a signal in response to its detection;

a transparent window inside the housing between a sample chamber and detection assembly, said transparent window being covered with a conductive transparent coating to minimize the direct injection of static charge; and

a controller inside the housing for determining whether a resulting signal processed in response to the signal generated by the detection assembly is indicative of the presence of the sample; and

an LED mounted in the sample compartment to emit a beam of light projecting through the window and striking a first photodiode which generates a signal, and software executed on the controller for comparing the signal generated by the first photodiode to an LED reference value to provide a calibration value indicative of the cleanliness of the transparent window and accounted for during the measurement of the resulting signal.

37. (Previously Presented) The hand-held assay device defined in claim 30, further comprising software executed on the controller for detecting the presence of the consumable in the sample compartment.

38. (Original) The hand-held assay device defined in claim 33 wherein each of the integrators is provided with a respective integration bypass capacitor and a solid state switch connected in parallel to one another to provide the integrated values of the sample signal and the reference signal, the hand-held device further comprising software executed on the controller for opening/closing the solid state switches before measuring the resulting signal to discharge accumulated static charges.

39. (Previously Presented) A hand-held assay device for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising:

a housing provided with a sample compartment receiving the sample;

a source of light mounted in the housing and emitting a beam of light extending along a path;

a detection assembly along the path for generating a resulting signal in response to the chemiluminescence;

a transparent window along the path between the sample compartment and the detection assembly, the detection assembly generating a calibration signal indicating cleanliness of the transparent window in response to being struck by the beam of light from the source; and

a controller having an analytical mode, wherein the resulting signal is evaluated, and a calibration mode, wherein the calibration signal is evaluated.

40. (Original) The hand-held assay device defined in claim 39 wherein the detection assembly comprises:

a first photodiode generating a sample signal in response to chemiluminescence;

a second photodiode shielded from the chemiluminescence and generating a reference signal;

a sample and reference switched integrators, each connected to the respective one of the first and second photodiodes and outputting integrated values of the sample and reference signals received by the controller, the reference signal being generated in response to environmental changes selected from the group consisting of temperature, humidity and a combination thereof,

software executed on the controller in the analytical mode for subtracting the integrated value of the sample signal from the value of the sample signal to determine an integrating value of the resulting signal, and

software executed on the controller for comparing the integrated value of the resulting signal to a sample threshold and for outputting the integrating value of the resulting signal if the value of the resulting signal is at least equal to the sample threshold.

41. (Original) The hand-held assay device defined in claim 39 wherein the source of light is an LED pressed in a peripheral wall of the sample compartment, said controller being provided with software for comparing the measured calibration signal with a reference calibration signal and

displaying an error signal if the measured calibration signal is not within the expected range of the reference calibration signal.

42. (Original) The hand-held device defined in claim 40, further comprising software executed on the controller for adjusting the resulting signal for the calibration signal if the latter is being within the expected range of the reference calibration signal.

43. (Currently Amended) A hand-held assay device for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising:

a housing provided with a sample compartment; with a closeable door for enclosing a consumable for collecting the sample and which is removably inserted into the sample compartment of the housing so that the sample and the consumable are inside the housing in the absence of a source of light from outside of the housing when the door is closed;

a detection assembly located in the housing along the path and juxtaposed with the consumable upon insertion of the consumable into the sample compartment, the detection assembly generating a resulting signal in response to the

chemiluminescence and generating a consumable-present signal in response to detecting the consumable; and

a controller preventing the device from operating further unless ~~the door is closed~~ a source of light from outside of the housing is absent and having an analytical mode, wherein the resulting signal is evaluated, and a detection mode, wherein the consumable-present signal is evaluated.

44. (Original) The hand-held device defined in claim 42, further comprising software executed on the controller for comparing the resulting signal with a predetermined threshold and for outputting a signal indicative of the presence of the sample if the resulting signal is at least equal to the predetermined threshold.

45. (Original) The hand-held assay device defined in claim 42 wherein the detection assembly comprises:

a first photodiode generating a sample signal in response to the chemiluminescence;

a second photodiode shielded from the chemiluminescence and generating a reference signal;

sample and reference switched integrators, each connected to the respective one of the first and second

photodiodes and outputting integrated values of the sample and reference signals received by the controller, the reference signal being generated in response to environmental changes selected from the group consisting of temperature, humidity and a combination thereof.

46. (Original) The hand-held assay device defined in claim 42, further comprising a source of light mounted in the sample compartment, and software executed on the controller for comparing the consumable-present signal with high, mid and low level values of an expected intensity of the light from the source of light.

47. (Previously Presented) The hand-held device defined in claim 45, further comprising software executed on the controller in a detection mode for turning a source of light on and software for determining a signal generated by the detection assembly in response to the turning the source of light off.

48. (Original) The hand-held device defined in claim 46, further comprising software executed on the controller for turning he source of light on and for determining a signal generated by the detection assembly in response to

turning the source of light on, software executed on the controller for subtracting the determined signal with the source of light off from the determined signal of the source of light off to calculate the difference between the determined signals.

49. (Previously Presented) The hand-held device defined in claim 47, further comprising software executed on the controller for outputting a signal indicative of the absence of a consumable in the sample compartment if the difference between the determined signals is within a predetermined range having a low level and a high level, wherein the low level corresponds to the reference signal generated by the second photodiode, and the high level correspond to a signal representing the expected intensity of the source of light.

50. (Previously Presented) A hand-held assay device for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising:

a housing provided with a sample compartment;

a consumable adapted to be removably inserted in the sample compartment after collecting the sample, the sample compartment being provided with a transparent bottom;

a source of light provided in the sample compartment and emitting a beam of light which projects through the transparent bottom;

a detection assembly juxtaposed with the transparent bottom for generating a first signal in response to detection of the chemiluminescence and a second signal in response to being struck by the beam of light; and

a controller receiving the first and second signals and having a first mode, wherein the first signal is evaluated to determine the presence of the sample, a second mode, wherein the second signal is evaluated to determine the cleanliness of the transparent bottom, and a third mode, wherein the second signal is determined to be indicative of the presence of the consumable.

51. (Original) The hand-held device defined in claim 49 wherein the detection assembly comprises:

a first photodiode generating a sample signal in response to the detection of the chemiluminescence;

a second photodiode shielded from the chemiluminescence and generating a reference signal;

sample and reference switched integrators, each connected to the respective one of the first and second photodiodes and outputting integrated values of the sample

and reference signals received by the controller, the reference signal being generated in response to environmental changes selected from the group consisting of temperature, humidity and a combination thereof.

52. (Previously Presented) The hand-held device defined in claim 49, further comprising software executed on the controller in a first mode for subtracting the integrated value of the reference signal from the integrating value of the sample signal to determine a value of the first signal, and software executed on the controller for comparing the value of the first signal to a predetermined threshold to output a signal indicative of the presence of the sample if the value of the first signal is at least equal to the predetermined threshold.

53. (Previously Presented) The hand-held device defined in claim 49 further comprising software executed on the controller working in a second mode for turning the source of light, and software executed on the controller for comparing a second signal with a reference signal representing the expected intensity of the source of light, and software executed on the controller for displaying a warning signal if the second signal is beyond the expected intensity range of the source of light.

54. (Previously Presented) The hand-held device defined in claim 52 wherein the expected intensity range of the source of light having low and high levels, the hand-held device further comprising software executed on the controller for comparing a second signal with the high level to detect the presence of the consumable if the second signal exceeds the high intensity level at a predetermined value, and software for switching the controller from a the third mode to the first mode in response to the detection of the consumable.

55. (Previously Presented) The hand-held device defined in claim 52 the hand-held device further comprising software executed on the controller for switching the controller from a third mode to the first mode if a second signal is above the high intensity level at a predetermined value to indicate the presence of the consumable in the sample compartment.

56. (Original) The hand-held assay device defined in claim 49 wherein the transparent bottom having opposite sides, one of which is coated with an ITO to provide a shutterless structure of the hand-held device.

57. (Currently Amended) A method of measuring the presence of a sample selected from the group consisting of ATP and other entity capable of generating chemiluminescence, comprising the steps of:

providing a first photodiode for generating a sample signal in response to detecting the chemiluminescence;

providing a second photodiode shielded from the chemiluminescence for generating a reference signal;

providing a closeable door allowing access to a sample compartment containing the sample in the absence of a source of light from outside of the sample compartment when the door is closed~~, the door having a sensor for generating a door signal~~;

providing a controller receiving ~~the door signal,~~ the sample signal and reference signal for preventing ~~the~~ further operation in response to ~~a door signal~~ light from outside of the housing as determined by software executed on the controller which generates a warning signal in response to the detection of the light indicative of an open door, and subtracting the reference signal from the sample signal to determine a resulting signal; and

comparing the resulting signal with a predetermined threshold signal; and

displaying the resulting signal indicative of the sample

if the resulting signal is at least equal to the threshold value.

58. (Currently Amended) A method for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, comprising the steps of:

providing a housing having a sample compartment formed with a transparent bottom;

providing a closeable door allowing access to the sample compartment containing the sample in the absence of a source of light from outside of the sample compartment when the door is closed;

activating a source of light in the sample compartment;

generating a resulting signal from the source of light ~~door signal in response to a closed door~~;

continuing the detection procedure if the resulting signal does not exceed a level expected of a test signal when there is an absence of a source of light from outside of the housing ~~the door signal is indicative of a closed door~~;

detecting the chemiluminescence and generating a signal in response to the detection;

providing a film of a conductive plastic material on the transparent bottom, thereby minimizing the direct injection of static charge; and

comparing the signal with a predetermined threshold; and

displaying a value of the signal if the signal is at least equal to the predetermined threshold.

59. (Currently Amended) A method for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, said sample being placed in a sample compartment provided in a housing, comprising the steps of:

providing a closeable door allowing access to the sample compartment containing the sample in the absence of a source of light from outside of the sample compartment when the door is closed;

activating a source of light in the sample compartment;

generating a resulting signal from the source of light ~~door signal in response to a closed door~~;

continuing the detection procedure if the resulting signal does not exceed a level expected of a test signal when there is an absence of a source of light from outside of the housing ~~the door signal is indicative of a closed door~~;

generating a sample signal in response to detecting the chemiluminescence;

generating a reference signal in response to detecting environmental changes selected from the group consisting of humidity, temperatures drifts and a combination thereof;

integrating the sample and reference signals during a controllable integration period to produce integrated values of the sample and reference signals;

digitizing the integrated values of the sample and reference signals;

subtracting the digitized value of the reference signal from the digitized value of the sample signal to determine a value of a resulting signal;

comparing the value of the resulting signal with a predetermined threshold and displaying the resulting signal indicative of the presence of the sample if the value of the resulting signal is at least equal to the threshold.

60. (Original) The method defined in claim 57 further comprising the step of incrementally increasing the integration time if the resulting signal is less than the threshold, and of monitoring the integration time to prevent further detection of the sample and reference signals if the integration time has reached a predetermined limit.

61. (Original) The method defined in claim 57, further comprising the step of detecting a consumable containing the sample in the sample compartment, sample compartment being provided with a transparent bottom.

62. (Previously Presented) A method for detecting the presence of a sample selected from the group consisting of ATP and other entity capable of chemically reacting to generate chemiluminescence, said sample being placed in a sample compartment provided in a housing, comprising the steps of:

generating a sample signal in response to detecting the chemiluminescence;

generating a reference signal in response to detecting environmental changes selected from the group consisting of humidity, temperatures drifts and a combination thereof;

integrating the sample and reference signals during a controllable integration period to produce integrated values of the sample and reference signals;

digitizing the integrated values of the sample and reference signals;

subtracting the digitized value of the reference signal from the digitized value of the sample signal to determine a value of a resulting signal;

comparing the value of the resulting signal with a predetermined threshold and displaying the resulting signal indicative of the presence of the sample if the value of the resulting signal is at least equal to the threshold; and

determining the cleanliness of the transparent bottom before determining the resulting signal.